



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,937	04/01/2004	Harold M. Lowe	218908202003	2936

26496 7590 10/06/2006

GREENBERG & LIEBERMAN, LLC
2141 WISCONSIN AVE, N.W.
SUITE C-2
WASHINGTON, DC 20007

EXAMINER

LANG, AMY T

ART UNIT PAPER NUMBER

1714

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/708,937

Applicant(s)

LOWE, HAROLD M.

Examiner

Amy T. Lang

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burangulov (US 2005/0136079 A1) in view of <http://en.wikipedia.org/wiki/Cartilage>.

Burangulov discloses a method of using fullerenes to produce antioxidants for various tissues, specifically cartilage ([0108]). The fullerenes are formed into clusters and then mixed with natural or synthetic oil ([0110]). This composition is then applied to the cartilage to enhance the healing of wounds and promote tissue regeneration ([00145], [00147], [00148]). The fullerene clusters are present in the composition applied to the cartilage in amounts from 0.02 to 10 wt% ([0013]). Burangulov discloses that 100 mg of fullerenes were utilized to form the fullerene clusters ([0202], Example 4). Since 100 mg of fullerenes were initially used and only 0.02 to 10 wt% of the

fullerenes are present in the composition, therefore when 5 wt% of the fullerenes are present in the composition, 5 mg are applied to the cartilage.

Burangulov does not disclose (i) the method of periodically injecting more fullerenes into the tissue and (ii) the fullerene clusters applied specifically to a joint.

With respect to (i) above, it is the examiner's first position that Burangulov discloses the application of fullerenes to cartilage and skin tissue ([00145]). The fullerene composition is then applied to the skin on a daily basis for weeks or months ([0140]). Therefore, Burangulov discloses periodically injecting more fullerenes to the skin tissue. Since Burangulov teaches that the fullerene composition can be applied to either skin or cartilage, it would have been obvious to apply it to the cartilage on a daily basis to also aid in wound healing,

With respect to (i) above, it is the examiner's second position that Burangulov teaches the stages of wound healing and the fullerene composition as aiding in promoting wound healing during each stage ([0164] and [0180]). Therefore, it would have been obvious for Burangulov to apply the disclosed fullerene composition during each wound healing stage, and thereby periodically applying the fullerene composition.

With respect to (ii) above, although Burangulov does not specifically disclose the fullerene composition as being applied to a joint, Burangulov does disclose its application with cartilage. <http://en.wikipedia.org/wiki/Cartilag>e discloses that it is known in the art that bone joints are comprised of cartilage. Therefore, given the disclosed utility by Burangulov for fullerenes aiding in cartilage and that joints are comprised of

Art Unit: 1714

cartilage, it would have been obvious to apply the fullerene composition specifically to joints.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhushan (US 5,558,903) in view of Merriam Webster's Collegiate Dictionary and Boffa (US 6,696,393 B1).

Bhushan discloses the method of adding fullerenes to a base oil to aid in lubrication properties between a steel ball sliding against a hardened steel disk (column 8, lines 33-44). It was found, as disclosed by Bhushan, that the addition of 0.5 to 5 wt% of fullerenes added to a base oil results in a reduction of wear on the steel disk (column 8, lines 44-56). Therefore, since the fullerene containing lubricant improved tribological performance of the steel ball and disk interface, the interface intrinsically was in need of lubrication. Furthermore, the lubricating oil composition disclosed by Bhushan readily envisions 100 mg of the total composition and wherein the fullerene additive comprises 5 wt% of the composition. Therefore, 5 mg of the fullerenes are present in the lubricant.

Bhushan does not disclose (i) the steel ball and disk interface as a joint and (ii) periodically injecting more fullerenes into the joint interface.

With respect to (i) above, Merriam Webster's Collegiate Dictionary defines a joint as "a part or space included between two articulations, knots, or nodes." Therefore, since the ball and joint are interacting at certain interfaces that produce a space between, it is the examiner's position that their interaction qualifies as a joint.

Furthermore, Boffa discloses a lubricant composition for reducing wear in an internal combustion engine (abstract). The composition was also subjected to the same test disclosed by Bhushan wherein a steel ball and disk interacted by sliding against one another to determine the wear (column 2, lines 56-67). Therefore, it would have been obvious to utilize the lubricating composition disclosed by Bhushan in joints of a motor, specifically an internal combustion engine.

With respect to (ii) above, since a motor continuously is subjected to wear throughout its lifetime, it would have been obvious to periodically apply more lubricant to the joints of a motor, which experience wear.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy T. Lang whose telephone number is 571-272-9057. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 1714

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AR

9/15/06

Vasu Jagannathan
VASU JAGANNATHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700